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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,277	03/25/2005	Alexandre A Zavadtsev	22S01.1-031	2130

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ATLANTA, GA 30339

EXAMINER

PHILOGENE, HAISSA

ART UNIT PAPER NUMBER

2828

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,277	<b>Applicant(s)</b> ZAVADTSEV ET AL.	
	<b>Examiner</b> Haissa Philogene	<b>Art Unit</b> 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 and 7 is/are allowed.
- 6) ☒ Claim(s) 1,3 and 4 is/are rejected.
- 7) ☒ Claim(s) 2 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishin et al., Patent No. 5,744,919, in view of Tanabe, Patent No. 5,381,072.

As per claim 1, Mishin discloses in Figs.2 and 3 a particle accelerator comprising: an injector (26) for generating charged particles; an electromagnetic drive subsystem (36) for generating pulses of electromagnetic waves; a first accelerating section (100) adapted to receive said electromagnetic waves and to transfer energy from said electromagnetic waves to said charged particles as said charged particles travel therethrough; a second accelerating section (102) adapted to transfer energy to said charged particles as said charged particles travel therethrough; a waveguide (74) connected to said electromagnetic drive subsystem and adapted to deliver said electromagnetic waves from said electromagnetic drive subsystem to said first accelerating section (100) via a first waveguide section (see Fig.3, not labeled), said waveguide (74) being at least partially physically interposed between said first accelerating section (100) and said second accelerating section (102) (see again Fig.3). Mishin does not disclose a tube connected to and extending between said first accelerating section and said second accelerating section, said tube being adapted to

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enable said charged particles to travel between said first accelerating section and said second accelerating section. Tanabe discloses in Fig.1 a particle accelerator (40) having only three accelerator sections 42-44 (see Col.2, lines 46-47) and a drift tube (31) connected to and extending between said first accelerating section (42) and said second accelerating section (43), said tube (31) being adapted to enable said charged particles from particle source (1) to travel between said first accelerating section (42) and said second accelerating section (43). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to employ the tube as taught by Tanabe into the Mishin type particle accelerator because it would ensure a conduction of charged particles from one accelerating section to the next, thereby minimizing the amount of back-bombardment of particles.

As per claims 3 and 4, Minshin in view of Tanabe discloses the claimed invention substantially as explained above. Further, Minshin discloses said waveguide (74) being a first waveguide (not labeled) connected to the first accelerating section (100) and a second waveguide (not labeled) connected to the second accelerating section (102) via phase shifter (110) and connected to said electromagnetic drive subsystem (36); said second waveguide being at least partially physically interposed between said first accelerating section (100) and said second accelerating section (102) (as shown); wherein said first waveguide and said second waveguide share a common wall (as shown in the coupling device (11) of Fig.3).

***Allowable Subject Matter***

Claims 2 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6 and 7 are allowed.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haimson, Patent No. 3,398,375; Schriber, Patent No. 4,006,422; Purser, Patent No. 3,423,684; Fujisawa, Patent No. 5,825,140; Nation et al., Patent No. 4,835,446.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haissa Philogene whose telephone number is (571) 272-1827. The examiner can normally be reached on 8:30 A.M.-6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Haissa Philogene  
Primary Examiner  
11/9/2011 2:21 PM